Nova Scotia

ANNUAL REPORT

for the fiscal year
ending March 31, 1986

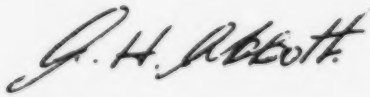
Department of the Environment

The Honourable R. Laird Stirling
Minister of the Environment
Province of Nova Scotia

Sir:

I have the honour to present to you the Annual Report of the Nova Scotia Department of the Environment for the fiscal year ending March 31, 1986.

Respectfully submitted



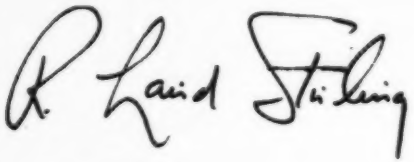
A.H. Abbott, P.Eng.
Deputy Minister

The Honourable Alan R. Abraham, C.D.
Lieutenant Governor
Province of Nova Scotia

May It Please Your Honour:

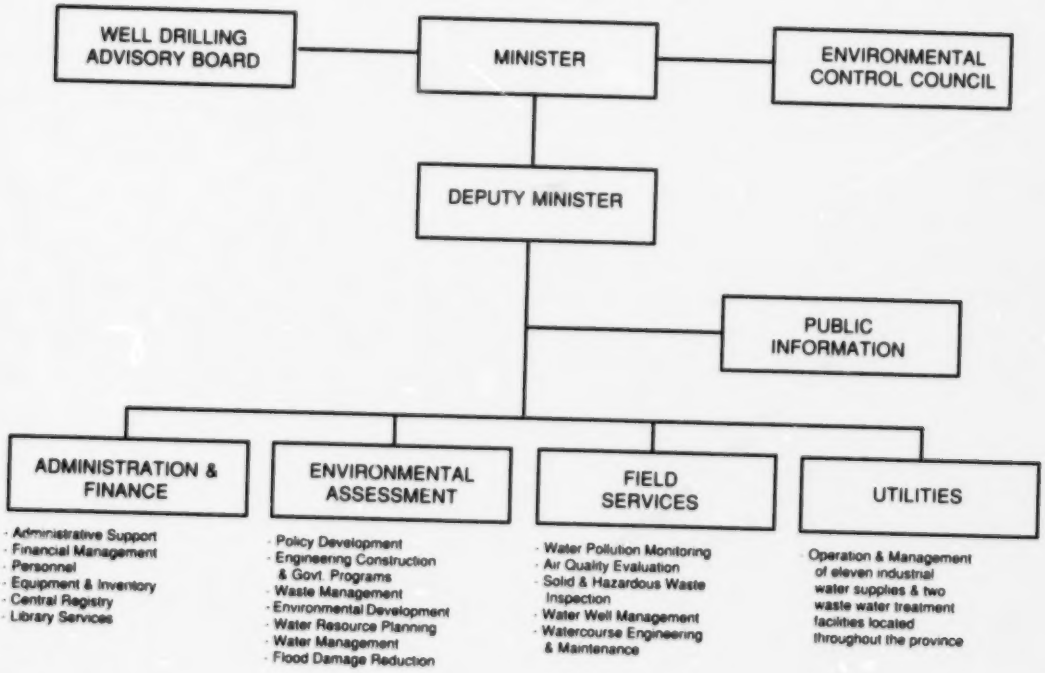
The undersigned has the privilege to present to your Honour the Annual Report of the Nova Scotia Department of the Environment for the fiscal year ending March 31, 1986.

Respectfully submitted



R. Laird Stirling
Minister of the Environment

DEPARTMENT OF THE ENVIRONMENT
ORGANIZATION 1985 - 86



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ROLE AND OBJECTIVES

The Nova Scotia Department of the Environment was established in 1973 to provide for the preservation and protection of the environment. Under the Environmental Protection Act, the Minister is responsible for:

> . . . the general supervision and control of the management, preservation and protection of the environment and shall ensure that all practical measures are taken in accordance with this or any other Act to preserve the environment from deterioration and to provide the best use of renewable resources for the benefit of the people of the Province.

In summary, the role and objectives of the Department are:

- to control and manage the provincial water resources to ensure their efficient development, fair sharing and wise use to support the social and economic development priorities of the Province.

- to protect, preserve and manage the quality of the Province's water, air and land resources for the greatest number of beneficial uses through appropriate land use practices and sound environmental management.

- to control and manage the safe use, handling, storage and disposal of wastes and dangerous goods which may be harmful to the environment.

- to assist and promote the development and implementation of integrated water resources and waste management plans and practices, in concert with various individuals, institutions, industries, municipalities, and governments.

The Department is responsible for administering four provincial statutes: The Environmental Protection Act, the Water Act, the Well Drilling Act, and the Beverage Containers Act.

The Department is divided into four divisions. These include three operating divisions: Environmental Assessment, Field Services and Utilities. Administration and Finance provides support service to the office of the Minister and Deputy Minister.

The Department's head office is located in Halifax. Other offices are located in Middleton, Port Hawkesbury, Lockeport, Pictou, Sydney, Truro, and Yarmouth areas.

LEGISLATION

In 1973, the new Department of the Environment took over the functions, legislative mandate and staff of the then existing Nova Scotia Water Resources Commission, and the Groundwater Section of the Nova Scotia Department of Mines.

The Department is responsible for administering three other provincial statutes besides the Environmental Protection Act: the Water Act, the Well Drilling Act, and the Beverage Containers Act.

- *Water Act*—The Minister is responsible under the Water Act for the control and general supervision of all watercourses including the use, allocation, pollution or alteration of water and watercourses.

- *Well Drilling Act*—The intent of the Well Drilling Act and Regulation is to ensure an adequate standard of well construction for the protection and management of well water resources and consumers utilizing well construction services.

- *Beverage Containers Act*—The purpose of the Beverage Containers Act and Regulations is to discourage littering of non-refillable beverage containers, and promote the reuse of beverage containers.

During the 1986 session two new Acts were introduced to the Legislature: the Dangerous Goods and Hazardous Waste Act, and the Pest Control Products Act. Amendments were also proposed to the Well Drilling Act.

ENVIRONMENTAL ASSESSMENT DIVISION

The Environmental Assessment Division, the largest operating division in the Department, has two main areas of responsibility. First, it is responsible for reviewing and assessing individual, municipal, industrial and government undertakings for their environmental acceptability, including enforcing permit terms and conditions under the Environmental Protection Act. Second, the division has responsibility for provincial water resource management including enforcement under the Water Act, with

the objective of promoting optimal development and protection of this resource.

This division also includes, for administrative purposes, the Canada–Nova Scotia Flood Damage Reduction Program and advisory services for department policy development.

The division is divided into five sections to carry out its programs: Waste Management, Engineering Construction and Government Programs, Environmental Development, Water Resources Planning, and Water Management Sections.

Waste Management Section

This section has two major areas of responsibilities:

- *Solid and Hazardous Waste Management*—provides technical assistance and advice to municipalities and industry on acceptable methods for disposing of solid and hazardous waste, as well as grants to municipalities for planning solid waste management systems.

- *Industrial Pollution Control*—provides an industrial pollution review program and assistance to industry with an evaluation of proposed pollution abatement facilities, and ensures that industry complies with permit requirements.

The section carried out a survey of abandoned solid waste disposal sites in the Province. This was a cost-shared program with Environment Canada. Its purpose was to identify any sites that were posing or that could, in the future, pose a threat to the environment. A report on the survey is now available.

Assistance was provided to eight municipalities for a total sum of $180,000 to study and devise plans for solid waste disposal regionally.

For the Industrial Waste Permit section, the major activity was in the mining sector where a complete review of the environmental impact of the tin mine in Yarmouth County was carried out. The impact of a number of new coal mines in Cape Breton was also studied.

A study of the Sydney Tar Ponds was initiated and is nearing completion. This study will determine the impact of the polyaromatic hydrocarbons (PAH's) contained in the sediments of the pond and provide

the most economical solution to eliminate further discharges of the toxic material into Sydney Harbour.

Engineering Construction and Government Programs Section

This section ensures that environmental concerns are incorporated into planning and construction of proposed land developments, such as subdivision applications and linear projects including highway and utility alignments, and municipal services such as the installation of water and sewer and treatment facilities.

Major activity was undertaken with respect to the Lakeside-Timberlea, Halifax County water and sewer services. The Province provided over $2 million in assistance for the pollution control aspects of the project. Negotiations with the City of Halifax were initiated with respect to the problem of sewage overflows to the MacIntosh Run and the pollution at the Herring Cove outfall.

A major study of the water quality in Halifax Harbour was carried out in the summer of 1984 and is continuing in an effort to provide data for future planning for pollution control in the Metro area.

A review of subdivision developments and the alignment of major highways form a major part of this section's activities.

There was a major increase in the number of applications for subdivision reviews (339 applications to the end of March 31, 1986) as a result of an increase in the number of municipalities submitting their subdivision applications to this Department for prior review and comments. This resulted in less siltation problems arising from this type of development. An Erosion and Sediment Control Manual was written and will soon be published. This manual will outline the steps a developer can take to eliminate sediment problems.

Highway alignment reviews of major concern were the #107 highway crossing of the Shubenacadie Canal and the route through the Chezzetcook Salt Marshes.

Environmental Development Section

This section has three major areas of responsibilities. These include pesticide management, environmental review and environmental studies.

- *Pesticides Management*—This program includes reviewing methods of spraying, type of pesticides for application and permits with subsequent field monitoring to ensure compliance with permit terms and conditions.

- *Environmental Review*—This includes reviewing potential environmental impacts of proposed development and commercial undertakings by the private sector, federal and provincial government agencies. Recommendations are made to government respecting their environmental suitability and what modifications to the proposals have to be made so that they can proceed.

- *Environmental Studies*—This program carries out studies to help develop and review provincial government environmental priority areas. This includes, among others, the assessment and development of a policy for Nova Scotia respecting acid rain based on work conducted on surface water quality over the last ten years. In addition, a program of selective monitoring of general lake and river quality is carried out throughout the province to determine background quality and monitoring changes.

The section's main activities during the year included issuing pesticide application permits, monitoring acid rain and conducting fresh water quality surveys. The number of applications for herbicide spraying doubled during the past year after the ban on aerial spraying was lifted. This produced a major strain on staff resources to process and monitor the spraying program.

This section maintains an acid rain monitoring network and considerable staff time was devoted to federal/provincial meetings to develop control strategy with respect to sulphur dioxide emissions.

Besides the routine lake sampling program, the section carried out a major study of Lake Echo to determine the cause of algae buildup.

It also carried out a number of major reviews with respect to environmental assessment studies, including offshore gas developments and onshore pipeline routes, rock quarry development in the Waverley area and uranium mining in the Province.

Development of Coastal Erosion Policy and the initiating of a demonstration project were also major activities of this section.

Water Resources Planning Section

The Water Resources Planning Section carries out its programs in two main areas: water resource service and water resources inventory.

- *Water Resources Services*—provides information and technical assistance to industry, municipal and other government agencies respecting the quality, quantity, use, development and protection of surface water and groundwater supply sources. Staff investigate actual and potential pollution problems to ensure the protection of water supplies. This also includes reviewing site suitability for land development, waste disposal and water supply development.

- *Water Resources Inventory*—staff carry out surface and groundwater investigations to evaluate the provincial water resources for protection and as a source of supply. This includes collecting basic data pertaining to water levels, flows and quality necessary for sound development planning, environmental assessment and water resources management. The province cost-shares with Canada the stream gauging network throughout the Province. The Province maintains its own groundwater level measuring network.

Major activities included investigating the groundwater quality of three communities where low levels of tetrachloroethylene were detected in the water supplies for Amherst, Truro and New Minas.

A major review of the hydrological network of stream gauging stations and well monitoring stations was carried out and a final report is being printed.

Last year a comprehensive data base and inventory of the groundwater and surface water resources in Nova Scotia were developed, encompassing both physical and chemical characteristics of these resources along with their availability for use.

Three reports have been prepared: *Water Resources Bibliography; Regional Water Resources; Sydney Coalfield, Nova Scotia;* and *Well Water Quality and Treatment in Nova Scotia.*

Water Management Section

The Water Management Section has two main program areas: reviewing water rights and watershed management. This section issues approval

permits for watercourse alteration, subject to government regulations and guidelines. It also recommends licenses to allocate the withdrawal of water for individual, municipal, industrial, agricultural and other uses. In addition, staff investigate complaints, recommend solutions and enforce requirements under the Water Act. The section coordinates water use and watercourse alteration permits with appropriate provincial and federal agencies.

Two documents were released during the year: *Environmental Construction Practice Specifications*, and a revised *Environmental Standards for the Construction of Forest Roads and Fire Ponds in Nova Scotia*. A revised permit and license application for Water Rights Permits was also developed.

WATER MANAGEMENT SECTION STATISTICS 1985–86

Water Rights Applications	
Received	384
Cancelled	39
Studies in Progress	2
Protected Watershed Designations	
Under Consideration	5

FIELD SERVICES DIVISION

The Field Services Division is responsible for conducting inspections and monitoring programs. It provides a wide range of investigative field activities as required by the Department in support of environmental protection.

The division has five main areas of responsibility: solid and hazardous waste inspection, air quality evaluation, water pollution control, water well management, and watercourse engineering and maintenance.

Solid and Hazardous Waste Inspection Section

The Solid and Hazardous Waste Inspection Section is responsible for an on-going inspection and monitoring program of municipal, industrial and private solid waste disposal site practices. The section is also responsible for the inspection of areas contaminated by oil or hazardous

material spills and undertakes supervision of the disposal of contaminated material.

The section reviews and appraises contingency planning with respect to accidents involving the handling and storage of gasoline and associated products, and offshore drilling production.

During the past year, the section responded to 409 spill reports and complaints. The number of reports received through the Department's emergency reporting phone number increased almost 75% from heightened awareness of the danger of spills, particularly chemical spills of substances such as PCBs.

SPILL REPORTS AND COMPLAINTS

Petroleum Spills	240
PCB Spills	46
Other Hazardous Materials	5
Solid Waste Dumping Complaints	118
TOTAL	409

The solid waste disposal site groundwater monitoring program continued into its third year. A total of 18 sites are included in the annual sampling program which now includes tests for PCB and dry cleaning fluid–perchloroethylene.

The department participated in a joint industry/government task force during the year. Its objective is to develop a set of regulations for underground petroleum storage tanks by 1987.

The Department's hazardous material response training program for fire, police and municipal officials continued into its second year and was well received.

Air Quality Evaluation Section

The Air Quality Evaluation Section is primarily responsible for:

- gathering air quality data in various areas of the Province
- measuring pollutants such as sulphur dioxide, nitrogen oxide, ozone, carbon monoxide, suspended particulate and radiation levels

- operating and maintaining an ambient air monitoring network in the vicinity of the Lingan Thermal Power Plant
- handling complaints from the public concerning air, noise, odour or related problems
- developing guidelines to assist industry in maintaining ambient air quality
- undertaking monitoring studies for existing or proposed industries
- assisting with stack emissions, testing of industrial sources.

Three major ambient air monitoring networks continued to operate in the Sydney–Glace Bay, Strait of Canso, and Halifax–Dartmouth areas.

Other activities included:

- operating a single ambient air monitoring site in the Trenton area, Pictou County. Total equipment operated during the year included 24 continuous monitors and 18 high volume samplers.
- a survey of the environmental impact of coal dust from trucking operations at the DEVCO wash plant near Sydney was undertaken. A total of 6 high volume samplers were used.
- computer operated automatic polling of air monitoring stations in the Strait of Canso area (telemetry) was in the process of being installed.
- the air monitoring station at City Hall in Halifax was relocated to the Post Office Building on Bedford Row.
- an ozone monitor was established in Kentville area to monitor long range transport of Ozone.
- ministerial control orders were issued against IMP for creating a nuisance with smoke emissions and against Wendy's Reliable Dry Cleaners Ltd. for improper storage of oil contaminated with PCB.

The Development of criteria for government legislation of combustion of waste oil was initiated. This work included carrying out a small survey of users and suppliers of waste oil and testing for PCB and a number of other parameters.

A total of 219 complaints and inquiries were handled by staff in the 1985 calendar year.

Water Pollution Control Monitoring Section

This section is responsible for promoting the proper operation of wastewater treatment facilities to achieve effective pollution control of raw sewage. It is also responsible for training operators, inspecting sewage treatment plants (municipal and industrial) and for responding to complaints related to water pollution and environmental degradation.

WATER POLLUTION CONTROL FACILITIES, NOVA SCOTIA, 1986*

County	Municipal	Industrial	Totals
Annapolis	8	2	10
Antigonish	9	0	9
Cape Breton	19	9	28
Colchester	17	3	20
Cumberland	19	2	21
Digby	9	0	9
Guysborough	9	0	9
Halifax	71	10	81
Hants	21	0	21
Inverness	20	0	20
Kings	14	3	17
Lunenburg	28	2	30
Pictou	19	2	21
Queens	9	0	9
Richmond	7	5	12
Shelburne	9	0	9
Victoria	12	1	13
Yarmouth	10	1	11
TOTALS	310	40	350

*All waste treatment facilities are monitored regularly.

A new approach to requests for expansion of wastewater treatment plant systems was put in place. This change provides for the complete review of an existing wastewater treatment facility by the Water Pollution Control Section and a recommendation offered for or against expansion.

Other major projects or activities of the section included:

- completion of report on fish kills in McClure's Brook, Truro
- a coordinated project undertaken to improve environmental degradation of several areas of the Little Salmon River, Halifax County
- a complete review of the Beverage Containers Act and Regulations initiated in response to growing concerns about litter
- formation and coordination of a committee to look into the matter of septic tank sludge disposal practices in Nova Scotia
- continuation of the section's key role in the development of a departmental inventory record keeping system
- completion or initiation of the operational effectiveness of wastewater treatment facilities at the following locations: Woodbine Trailer Court, Little Springfield Estates, Bridgewater, Michelin Tire Plant, Lantz, Elmsdale, Enfield, Milford and Shubenacadie.

Staff and resources also were committed to investigating problems of Rio Algom Ltd. Tin Mine discharging into the Tusket River.

Water Well Management Section

The Water Well Management Section is responsible for administering the Well Drilling Act and for associated enforcement/inspection activities. The Well Drilling Act requires that all well construction contractors operating in the Province be licensed. Also, the Act provides a Well Drilling Advisory Board made up of representatives from the well drilling industry and other government departments to advise the Minister of the Environment on matters pertaining to well drilling in the Province.

The Water Well Management Section, through regular inspections, activities and response to complaints, strives to ensure that the public receives high quality well construction. High standards of workmanship are ensured by sponsoring courses at well drilling schools and through technical programs at conventions. About 50 percent of the Province's population depend on wells as their source of water.

During the year a total of 300 complaints and enquiries respecting well water supplies were handled by inspectors of the section.

The mapping system and report forms associated with well construction logs were changed to achieve an overall improvement in the storage and handling of well log information.

Revised regulations were passed by Governor in Council during the year, the result of a comprehensive review by departmental staff and members of the Well Drilling Advisory Board.

The Water Well Management group helped with several large water well construction proposals including water supply projects for the Towns of Liverpool, Pictou and Trenton.

WATER WELL DRILLING STATISTICS
Year Ending 1985

Wells Drilled	**Number**
Observation	5
Industrial	24
Public	10
Domestic	2686
Equipment Used Full or Part-time	
Cable	35
Rotary	38
Backhoe	40
Jetting	1
Diamond	Nil
Men Employed Full or Part-time	230
Pump Tests Assisted On	17
Accidents, Including Diamond Drilling	
Fatal	0
Compensable	4
Medical Aid	Not Reported

Licenses Issued

Drilling Machine	76
Backhoe	40

Written Complaints and Inquiries*

Complaints	94
Inquiries	197

Water Samples

Well and Stream	168

*Phone calls and personal visits clear up about 80% of the inquiries.

Water well construction and associated pump tests were recommended and overseen for the Nova Scotia Departments of Lands and Forests, Housing, Transportation and various hospitals, farms and fish plants.

Watercourse Engineering and Maintenance Section

This section plans and implements environmental projects to modify the channels of freshwater streams, thereby reducing property damage caused by erosion and flooding. Throughout the Province, the section administers a cost-shared Streambank Protection Program and a fully funded Stream Maintenance Program. Staff investigate erosion and flooding problems, provide reports and recommendations, and supervise works implemented for channel restoration—including channel reconstruction, gravel bar removal, armour rock protection, and special projects (dams and dykes).

A list of work under the cost-shared Streambank Protection Program for the period is outlined by number of sites per county:

COST-SHARED STREAMBANK PROTECTION SITES

County	No. of Sites
Antigonish	5
Colchester	5
Cumberland	1
Hants	2
Pictou	2
TOTAL	15

The following projects were undertaken this year under the Stream Maintenance Program:

- *James River, Upstream of Trunk No. 4*
  A 1150-foot section of river channel was reconstructed to restore uniform flow conditions. Problems of ice passage and severe bank erosion concerned local residents and the N.S. Department of Transportation, whose bridge over Trunk No. 4 was threatened. That department contributed to extend the new channel to and through their bridge opening. A total of 1506.2 tons of rip-rap was placed.

- *Chiganois River, Peter Dickie, Lewis Barnhill & Others*
  A large gravel bar formed at this location over a number of years as erosion continued to cut into the erodible marsh soil. This process continued until the channel required alignment restoration. A total of 833.65 tons of rip-rap was placed.

- *Chiganois River, Annabelle Thompson, Canadian National Railway & Others*
  The CNR main line to Moncton crosses the Chiganois River at Belmont with a double span steel trestle bridge. The westerly opening serves as the main channel while the easterly opening provides for flood relief. A gravel deposit accumulated in the latter, which was removed to eliminate any obstruction of flood flows.

- *Stewiacke River, Clarence Dennis & Others*
  A large gravel bar was adjacent to the Clarence Dennis farm at Upper Stewiacke. Reduced channel capacity at this location contributed to overtopping flows and streambank erosion. The gravel bar was reshaped and approximately 500 cubic yards of gravel were stock-piled on the Dennis property.

- *Middle River, Jack MacDonald & Others*
  The section of the Middle River running from Middle River to Yankee Line and Nyanza Bay exhibits a variety of channel conditions, ranging from excellent to almost non-existent. The system is flashy with the cutting of new channels and high bed load movement. A 2900-foot section of the river behind Middle River Motors was restored through gravel bar cropping, some channelization, and extensive bank protection. The project was designed to keep the river in one channel while protecting several hundred acres of newly planted seedlings. Due to the scale of the restoration required, the work was planned in two phases. Phase I only was completed during 1985–1986—a total of 2861.58 tons of rip-rap was placed.

- *Saints Rest, West Colchester*
  A coastal revetment was requested by the West Colchester Rural Development Association as a "demonstration project" in combatting erosion. A substantial amount of staff time was spent in field survey and engineering design preparation. Staff negotiated a lease on a piece of land on Bass River Mountain for a rock quarry. Rock from this source was to serve as filter rock behind the revetment. The quarry site was cleared and a working face prepared.

- *Stewiacke River, Island Site*
  A 1000-foot section of the river was channelized, aligned and reinforced to provide a stable channel to alleviate erosion and flooding problems to adjacent farm land.

- *Stewiacke River, Mason-Kennedy*
  Gravel bars were removed to provide a uniform channel section and reduce pressure on previously placed bank protection.

- *Stewiacke River, Meadowvale*
  Improvements were made to existing bank protection by raising the rock height; this will help prevent flows from leaving the main channel and cutting across valuable agricultural property.

- *Salmon River, Groin Site*
  A 75-foot groin was established in the channel to improve the alignment and ability of the channel to transport ice thus preventing erosion and flooding problems to adjacent residential property.

- *Salmon River Dyke Construction*
  A flood control project was cost-shared by the Town of Truro, Village of Bible Hill, and the Nova Scotia Department of the Environment. Approximately 2400 feet of dyke were built behind residential properties on East Queen Street extending from High Street downstream to Elizabeth Street. Approximately 1050 feet of dyke were also constructed on the north side of the river along Main Street in Bible Hill starting at the Holy Well Park and extending downstream to the Walker Street bridge. Residential properties on Riverside Avenue and Avon Street are protected by this structure.

  Phase II involves the diversion of 320 feet of the Lepper Brook to the west where it discharges into the Salmon River and a 180-foot extension of the dyke to the west. This work was designed to improve the discharge of Lepper Brook during flood stage and at the same time to prevent the outlet from becoming blocked by ice flows from

the Salmon River above the CNR bridge. The west end of the dyke was protected with 1135.43 tons of heavy rip-rap.

- *North River, Yellow Rocket Weed Removal*
  At the request of the Nova Scotia Department of Agriculture & Marketing, a limited yellow rocket weed removal program was carried out. Seven students under staff supervision completed this task along the banks of the North River.

- *Hustins Beach, Blomidon Cemetery*
  Receding coastal banks have been a concern of the Blomidon Cemetery Corporation for years. In September, 1978 a rock-filled treated timber crib breakwater was constructed by the Nova Scotia Department of Transportation to protect the cemetery. Signs of failure began to appear the following year and continued until staff removed the breakwater in November, 1985. The structure was replaced with a 285-foot long revetment, designed and constructed by staff of this section. The project involved substantial excavation in the beach foreshore followed by placement of 3681.13 tons of rip-rap on a 2:1 (H:V) slope to dissipate wave energy.

UTILITIES DIVISION

The Utilities Division is responsible for operating and managing 13 provincially-owned and maintained industrial water supplies and waste treatment facilities. The division is also responsible for identifying and protecting potential industrial and municipal water supplies as directed by Government and for designing, installing and recommending major renovations and alterations to meet objectives.

During the 1985–1986 fiscal year, eleven water supply stations, one domestic sewage treatment plant and one industrial waste treatment facility were operated and maintained.

The water pumping stations included salt water supply plants at Grand Etang and Lockeport; freshwater supplies at Cheticamp, Port Hawkesbury, Canso, Pictou, Chester, Riverport, Lockeport and Middle and Lower East Pubnico; and a treated fresh water supply stream in Lockeport.

In addition, industrial waste from Scott Maritimes Limited in Pictou and domestic waste in the Town of Canso are treated.

The Melford Reservoir System in Guysborough County began to be used as the water source of a privately-owned electrical generating station.

The major alterations and rebuilding required to maintain efficient operations at the Lockeport Salt Water Station were completed, although the bulk of the work was performed and paid for in fiscal 1983–84.

ADMINISTRATION AND FINANCE DIVISION

The Administration and Finance Division provides executive management, administrative financial support and central support sources to the three operations divisions of the Department. The four activity centres include:

- *Office of the Minister and Deputy Minister*—providing executive management to the Department, liaison with municipal, provincial and federal agencies and recommendations to the Provincial Cabinet on environmental policies and legislation.

- *Offshore Oil and Gas Development Review*—providing a coordinated review and environmental assessment of potential major impacts of offshore oil and gas development.

- *Information and Education Services*—providing a coordinated departmental liaison with the public and the media. The activity promotes a public awareness of environmental issues through an education program and answers enquiries.

- *Administrative Support Services*—the administrative and financial support functions which this activity provides to the Department include: accounting, personnel, central filing, central stationery and inventory control, as well as day-to-day management of the operations of the office facility and its equipment. Also, a specialized environmental library-research facility is maintained for use by educational institutions consultants, industry and other government agencies.

GENERAL

Environmental Emergencies

In Nova Scotia, all oil or chemical spills must be reported to: 426-6030 in the Halifax/Dartmouth metropolitan area, or ZENITH 49000 else-

where in the province. These reporting numbers connect to the 24-hour operator at the Canadian Coast Guard Traffic Centre in Dartmouth, fulfilling the legal reporting obligations of all the environmental regulatory agencies.

The Nova Scotia Department of the Environment cooperates with all other provincial and federal departments to ensure a coordinated and integrated response to all spill incidents. The Department's involvement varies depending on the spill circumstances for designating disposal sites and debris disposal procedures.

The Department operates from its main office in Halifax and from five offices located across the province:

Region	Location	Phone
Central	Halifax	424-5300
Valley	Middleton	825-6246
Northumberland	Pictou	396-4194
Truro	Truro	895-9266
Canso	Port Hawkesbury	625-0791
Cape Breton	Sydney	539-8515

Nova Scotia Environmental Control Council

The Environmental Control Council is a 12-15 member citizens' advisory board that gives advice to the Minister of the Environment and represents the interests of the environment and general public in resource decisions. Under the Environmental Protection Act, membership includes representation from health, law, engineering, industry, labour, municipality, conservation or ecology groups, agriculture, academic, forestry and fisheries. The council is supported by an executive secretary and a research coordinator, and includes the Deputy Minister of the Environment as an ex-officio member.

The council offers annual awards in recognition of outstanding environmental service in seven categories: individual, groups, organizations, education, youth, government, and industry. Details about the Environmental Awards program, activities of the council and a copy of its annual report can be obtained by contacting:

The Executive Secretary
Nova Scotia Environmental Control Council
P.O. Box 2107
Halifax, Nova Scotia
B3J 3B7
Phone (902) 424-5300

Well Drilling Advisory Board

An industry/government advisory board has been established under the Well Drilling Act to provide advice to the Minister on regulations and standards for the industry. The board meets on a regular basis respecting well drilling and related problems. It also helps the Department examine applications and qualifications, and make subsequent recommendations for licensing under the Act.

Canada–Nova Scotia Flood Damage Reduction Program

In June 1978, the Province entered into a five-year joint Canada–Nova Scotia Flood Damage Reduction Program. It was funded equally with the federal government under the Canada–Nova Scotia General Agreement Respecting Flood Damage Reduction, along with two subsidiary agreements respecting flood risk mapping and studies.

This program:

- attempts to reduce damage caused by flooding in Nova Scotia
- conducts flood risk mapping to identify flood prone areas
- studies flooding problems to determine the cost of remedial methods and recommends measures to reduce or prevent damage
- provides information to the public to ensure safety and restrict private and public development in flood prone areas.

The current agreements expires in 1994.

The program is supervised by a Steering Committee appointed by the provincial and federal ministers of the environment. Technical Committees consisting of representatives from several federal and provincial departments oversee mapping and remedies studies, which

are usually done under contract by consulting engineers. A joint federal-provincial public information committee is responsible for the publicity program.

Information about the program and a copy of the annual report can be obtained by contacting:

Environment Canada
Inland Waters Directorate
4th Floor, Queen Square
45 Alderney Drive
Dartmouth, Nova Scotia
B2Y 2N6
Phone (902) 426-3266

and

Nova Scotia Department
of the Environment
5th Floor
5151 Terminal Road
Halifax, Nova Scotia
B3J 3B7
Phone (902) 424-5300

Advisory Groups

- *Sable Island Advisory Committee*
  The Department participates on the committee to advise the federal Department of Transportation on environmental matters related to Sable Island.

- *Petite Riviere Watershed Advisory Group*
  The Petite Riviere Watershed Advisory Group was formed by the Department in 1977 in response to a number of water related problems in the Petite Riviere system in Lunenburg County.

The purpose of this advisory group is to advise the Province of Nova Scotia through the Department, the Town of Bridgewater, and the Municipality of the District of Lunenburg on problems and solutions to water quality and flows in the watershed of Minamkeak Lake, Leipsigate Lake, Hebb Lake, Fancy Lake, and the Petite Riviere system.

Members of the Advisory Group are largely volunteers, with representation from the Town of Bridgewater, Municipality of the District of Lunenburg, Bridgewater Public Service Commission, Hebbville Village Commission, Fancy Lake Owners' Association, Minamkeak Lake Owners' Association, N.S. Salmon Anglers' Association, Crousetown-Petite Riviere area, and the Department of the Environment.

Information on the projects and activities of the Advisory Group, and meeting dates, can be obtained by contacting:

Chairman
Petite Riviere Advisory Group
c/o Lunenburg County District Planning Commission
P.O. Box 341
23 Pleasant Street
Bridgewater, Nova Scotia
B4V 2N9
Phone (902) 543-8244

Queens County, Medway–Mersey Watershed Advisory Group

This advisory group was established by the Minister of the Environment in the spring of 1984 to advise the Province through the Department on problems relating to water quality and flows in the Medway–Mersey River systems in Queens County. The impetus for the group's formation was provided by local concern over the proposed Alma Lake water division into the Nictaux power generating system from the Mersey River system. The advisory group's initial task was to review the proposed diversion in detail.

Local membership included nominees from Queens County Council, Town of Liverpool, Queens County Fish and Game Association, Nova Scotia Salmon Association, South Shore Environmental Protection Association, Nova Scotia Guides Association, Queens County Tourist Association, Bowaters Mersey Ltd., North Queens Historical Society, and the Liverpool–Queens Development Commission.

Staff resource assistance to the Advisory Groups was provided by the provincial departments of Environment and Fisheries; the Queens County Planning Department provided secretariat services to the group.

Information on the activities of the Advisory Group, and meeting dates can be obtained by contacting:

Chairman
Queens County Medway–Mersey
Watershed Advisory Group
c/o Queens County Planning Department
P.O. Box 1264, Liverpool
B0T 1K0
Phone (902) 354-5741

Grants Program

For the fiscal year 1985–86 grants and asistance totalling $1,165,610.51 for sewage abatement programs, solid waste and water studies went to various cities, towns, municipalities, organizations and agencies such as:

- Metro Authority of Halifax, Dartmouth, Bedford, and Halifax County
- Towns of Amherst, Dominion, Glace Bay, Middleton, Sydney Mines, and Truro
- Municipalities of Counties of Annapolis, Cape Breton, Kings, and Halifax
- Village of Weymouth
- Centre for Water Resources Studies, Technical University of Nova Scotia, and Nova Scotia Road Builders Association.

Meetings, Committees, Education and Technical Seminars

Departmental staff were involved in a number of intragovernmental and interprovincial meetings and committees. They acted as representatives and gave presentations to educational and technical seminars, public interest groups and various associations such as: The Deputy Ministers' Committee on Land Use, Land Resources Coordinating Council of Voluntary Planning, Canadian Council of Resources and Environment Ministers, Atlantic Canada Section of the American Water Works Association, Atlantic Province's Association Leaking Underground Storage Tanks Task Force, Ministers' Task Force on Dangerous Goods and Hazardous Wastes, Maritime Provinces Water and Wastewater Operators Association, Metro Area Planning Commission Steering Committee for Harbour Cleanup, and the Management Committee for the proposed Sydney Tar Pond Cleanup Project.

Public Information, Education and Reports

During the year, four new reports became available:

- *Well Water Quality and Treatment in Nova Scotia* by N.S. McLeod and D. Farrell (1986)

- *Water Resources Bibliography*, compiled by D.S. MacFarlane and J.H. Fraser (1985)

- *Regional Water Resources, Sydney Coalfield* by F.H. Baechler (1986)

- *Hydrologic Network Review for Nova Scotia*, jointly prepared by Environment Canada and the Nova Scotia Department of the Environment (1985).

Other brochures, reports and information kits on various environmental matters are available from the Department on request. Included among these are: *Household Hazardous Waste; Safe Operation of Wood Stoves; Our Freshwater Resources; "The Food Chain"* kit for elementary schools; *Pesticide Safety Handbook*; and *Environmental Standards for Construction of Forest Roads and Ponds in Nova Scotia.*

A library is also maintained by the Department which includes technical and scientific reports on environmental and resource management matters and various studies and reports commissioned by the Department over the years.